

PRIME Technology enables a rapidly deployed slim wellbore cleanout solution on e-line

A North Sea customer had a new horizontal well which was due to be brought online. The well had been designed using ball-drop-activated multistage fracturing sleeves installed as an integral part of the lower completion. Injectivity to start the stim operation was to be achieved by first opening a pressure activated toe sleeve, followed by a multi drop-ball sequence to open the ball activated sleeves within the various stages. When initial attempts to open the toe sleeve proved unsuccessful, debris blockage was suspected. A bailer was run on e-line to confirm this, to establish the holdup depth (HUD) and to collect a sample of the debris. Once confirmed, the decision was taken to first remove the debris from the wellbore to a maximum depth, and to then perforate to re-establish pressure connectivity and continue with the stim operation.

Solution

The situation necessitated an urgent, timely mobilization of an efficient and effective wellbore cleanout solution. It was essential to operate successfully in this extended reach, horizontal 2.875in drift ID completion – to gain access to a preferred target depth below the HUD at which to perforate to

establish injectivity. This would enable the frac sleeve production initiation sequence to proceed from as deep as possible hence minimizing any loss of reservoir connectivity. Based on their prior success utilizing the our **PrecisionCollector** technology the customer elected to utilize this wellbore cleanout solution. This solution would be further enhanced by utilizing the **PRIME Technology platform**.

Using the **PowerTrac PRIME Tractor** combined with the **Direct Drive Rotation PRIME (DDR)** device to run the **PrecisionCollector 250** meant that no preconfiguration of the tools were required, hence enabling fast mobilization of this light, agile and highly effective e-line deployed solution. Realtime in-well adjustability of the tractor's speed/force would first be optimized to provide efficient conveyance along the extensive horizontal section of the well. Key toolstring parameters would then be adjusted on-the-fly to provide the required tractor force for weight-on-bit in sync with the rotational torque and RPM needed, all optimized in real-time to best manage the collection of the debris that was confronted.

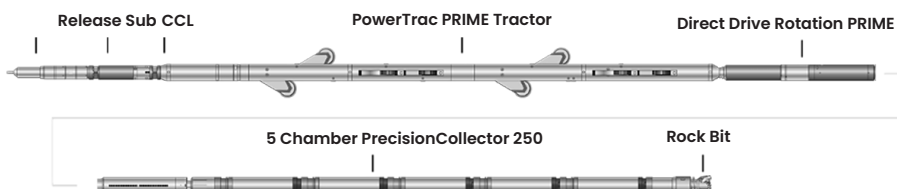
Challenges

- Debris blockage in extended reach, horizontal 2.875 in drift ID completion
- Remove debris from the wellbore to a maximum depth
- Perforate to re-establish pressure connectivity and continue with stim operation

Results

- Five cleanout runs were carried out using a five-chamber PrecisionCollector configuration
- Tractor was also used to negotiate various pinch points while conveying the collector toolstring to task depth
- A total of approximately 47 liters of debris was removed from the well, successfully clearing 78 meters of wellbore
- Injectivity was achieved enabling the drop ball sequence to be executed and the multi-stage stimulation operation carried out

PRIME Enhanced PrecisionCollector Toolstring

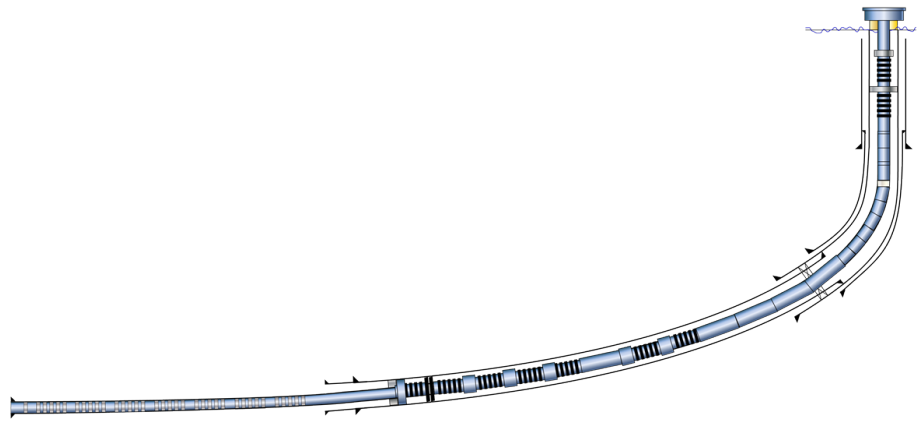


Result

Five cleanout runs were carried out using a five-chamber **PrecisionCollector** configuration, capable of collecting a total of 12 litres of debris per run. The tractor was also used to negotiate various pinch points while conveying the collector toolstring to task depth.

A total of approximately 47 Litres of debris was removed from the well, successfully clearing 78 meters of wellbore. The perforation string was then deployed using the **PowerTrac PRIME Tractor** and the well perforated successfully. Injectivity was achieved enabling the drop ball sequence to be executed and the multi-stage stimulation operation carried out, following which the well was put onto production.

Multi-stage Frac Sleeve Completion



Samples of wellbore debris removed from the well by the PrecisionCollector 250

